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(54) LEAFLET ATTACHMENT FRAME FOR A PROSTHETIC VALVE

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- (58) Field of Classification Search CPC A61F 2/2412; A61F 2/2418 USPC 623/1.13, 1.24-1.26, 2.12-2.19, 910 See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

3,409,013	Α		11/1968	Berry		
3,548,417	Α		12/1970			
3 570 014	Α	ıķ:	3/1971	Hancock 6	523/2	18

3,587,115	Α		6/1971	Shiley	
3,657,744	Α		4/1972	Ersek	
3,671,979	Α		6/1972	Moulopoulos	
3,714,671	Α		2/1973	Edwards et al.	
3,755,823	Α	*	9/1973	Hancock	623/2.18
4,035,849	Α		7/1977	Angell et al.	
4,056,854	Α		11/1977	Boretos et al.	
4,106,129	Α		8/1978	Carpentier et al.	
4,222,126	Α		9/1980	Boretos et al.	
4,265,694	Α		5/1981	Boretos et al.	
4,297,749	Α		11/1981	Davis et al.	
			(Con	tinued)	

FOREIGN PATENT DOCUMENTS

DE 19532846 3/1997

OTHER PUBLICATIONS

Andersen, et al., Transluminal implantation of artificial heart valves. Description of a new expandable aortic valve and initial results with implantation by catheter technique in closed chest pigs. European Heart Journal (1992), 13, 704-708.

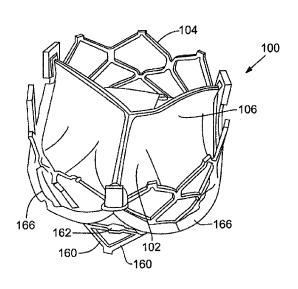
(Continued)

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ABSTRACT

An implantable prosthetic valve has an upper frame section and a lower frame section. The upper frame section has a plurality of struts and a first leaflet receiving surface at a lower portion of the upper frame section. The lower frame section has a second leaflet receiving surface at an upper portion of the lower frame section. An edge of a flexible leaflet is disposed between the first and second leaflet receiving surfaces to attach the leaflet to the upper and lower frame sections.

11 Claims, 8 Drawing Sheets



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